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WHAT IS CLAIMED IS:

- 1 1. A method of producing nitrogen gas, comprising steps of:
2 compressing air to generate compressed air;
3 providing iron powder; and
4 reacting the compressed air with the iron powder to form iron oxide,
5 so that oxygen contained in the compressed air is reduced to obtain remained
6 nitrogen gas.
- 1 2. The producing method as set forth in claim 1, further comprising a
2 step of adding a catalyst to the iron powder.
- 1 3. The producing method as set forth in claim 2, wherein the catalyst is
2 comprised of sodium chloride.
- 1 4. The producing method as set forth in claim 1, further comprising a
2 step of adding water to the iron powder.
- 1 5. The producing method as set forth in claim 4, further comprising a
2 step of adding a moisture retaining material to the iron powder.
- 1 6. The producing method as set forth in claim 1, further comprising a
2 step of passing the compressed air through a hollow fiber membrane, before
3 the compressed air is reacted with the iron powder.

1 7. The producing method as set forth in claim 6, further comprising a
2 step of heating the compressed air, before the compressed air is passed
3 through the hollow fiber membrane.

1 8. The producing method as set forth in claim 6, wherein the hollow fiber
2 membrane is comprised of polyimide.

1 9. The producing method as set forth in claim 1, further comprising a
2 step of passing the compressed air through a nitrogen generator according to
3 a pressure swing absorption technique, before the compressed air is passed
4 through the hollow fiber membrane.

1 10. An apparatus for producing nitrogen gas, comprising:
2 a compressor, which generates compressed air; and
3 a deoxidizing chamber, in which iron powder is provided and to which
4 the compressed air is supplied such that the compressed air reacts with the
5 iron powder to form iron oxide, so that oxygen contained in the compressed air
6 is reduced to obtain remained nitrogen gas.

1 11. The producing apparatus as set forth in claim 10, wherein a catalyst is
2 added to the iron powder.

1 12. The producing apparatus as set forth in claim 11, wherein the catalyst
2 is comprised of sodium chloride.

1 13. The producing apparatus as set forth in claim 10, wherein water is
2 added to the iron powder.

1 14. The producing apparatus as set forth in claim 13, wherein a moisture
2 retaining material is added to the iron powder.

1 15. The producing apparatus as set forth in claim 10, further comprising a
2 hollow fiber membrane, through which the compressed air is passed before
3 being supplied to the deoxidizing chamber.

1 16. The producing apparatus as set forth in claim 15, further comprising a
2 heat exchanger, which heats the compressed air before the compressed air
3 passes through the hollow chamber membrane.

1 17. The producing apparatus as set forth in claim 15, wherein the hollow
2 fiber membrane is comprised of polyimide.

1 18. The producing apparatus as set forth in claim 10, further comprising a
2 nitrogen generator according to a pressure swing absorption technique,
3 through which the compressed air is passed before being supplied to the
4 deoxidizing chamber.

1 19. The producing apparatus as set forth in claim 15, further comprising a
2 throttle valve, arranged at an immediate downstream of the hollow chamber
3 membrane and operable to adjust a flow rate of the compressed chamber

4 passing through the hollow chamber membrane.

1 20. The producing apparatus as set forth in claim 10, further comprising a
2 filter, which removes dusts from the nitrogen gas supplied from the deoxidizing
3 chamber.

1 21. The producing apparatus as set forth in claim 18, wherein the
2 nitrogen gas generator comprises:
3 a first oxygen absorbing tank;
4 a first throttle valve, operable to adjust a flow rate of the compressed
5 air passing through the first oxygen absorbing tank;
6 a second oxygen absorbing tank; and
7 a second throttle valve, operable to adjust a flow rate of the
8 compressed air passing through the second oxygen absorbing tank.

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